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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,309	11/25/2003	Liya Regel	86655SHS	9316

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EXAMINER

CHEN, BRET P

ART UNIT PAPER NUMBER

1762

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/722,309

Applicant(s)

REGEL ET AL.

Examiner

B. Chen

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1-8, 25 are pending in this application. Amended claims 1-3, canceled claims 9-24, and newly added claim 25 are noted.

The amendment dated 12/5/05 has been entered and carefully considered. The examiner appreciates the amendments to the claims. In view of said amendments, the 112 rejection and the art rejection have been withdrawn.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-8, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (WO 200181660 A1) in view of Cann (5,340,401). Takagi (20030108672) is being used as the translation for Takgai (WO 200181660).

Takagi discloses a method of forming a diamond coating on a substrate in a sealed chamber by placing a graphite rod in proximity to a substrate, sealing the chamber at a reduced pressure (30-500 Torr) of hydrogen gas, and passing electrical current through the graphite rod until the substrate is heated to 350-850°C to form precursors for diamond deposition from the graphite rod and hydrogen gas which form a diamond film on the substrate (Paragraphs 16-20). Takagi uses graphite rod support members 3 to provide electrical current to the graphite rod (Paragraph 16). The diamond film can be single crystal (paragraph 13), the deposition time can be 5-120 minutes (Paragraph 21), and the substrate can be glass (paragraph 16). However, the

Art Unit: 1762

reference fails to teach “combining a graphite rod and a metal wire” and “placing the combined graphite rod and metal wire into a chamber”.

Cann discloses a diamond deposition method wherein a graphite rod is heated by passing electrical current therethrough so as to heat a substrate and hydrogen gas provided in a chamber to form hydrocarbons which provide precursors to form diamond on the substrate (abstract). As show in Figure 1 and described at col.4 lines 45-57, the electrical current is passed through the graphite rod by means of an electrical conductor 43 extending through graphite rod support block 39 and attached to the graphite rod.

It would have been obvious to substitute the supporting blocks and electrical conductor taught of Cann for the graphite rod heating means of Takagi because both means successfully accomplish the task of providing electrical current to the graphite rod to heat it to a temperature sufficient to react with hydrogen and heat a nearby substrate. Hence, one would reasonably expect both means to be suitable to successfully perform the task.

Cann discloses electrical conductors in general as opposed to metal wires in particular. However, the examiner takes official notice that the use of metal wires as electrical conductors is extremely common and well known and it would have been obvious to use metal wires as the electrical conductor given their common use for this purpose. If the applicants disagree with the examiner’s statement that metal wires are very well known electrical conductors, the applicant are requested to clearly state so in response to this office action.

In addition, Cann does not disclose placing the “combined” rod and metal wire in the chamber (ie. rod and wire already combined before placement in the chamber). However, one would clearly recognize from Cann that there are only two ways to provide the final structure for

Art Unit: 1762

the graphite heater, namely, to connect the wire to the rod before placing it into the chamber and feeding the other end through the chamber wall to the power sources or connecting the end of the wire to the graphite rod inside the chamber (ie. combining in the chamber). As either option would clearly provide the final structure for heating the graphite rod and applicants have not provided evidence of a criticality for placing the combined rod and wire in the chamber as opposed to combining them once they are in the chamber, it would have been obvious to perform the combining step before placing the rod and wire in the chamber as doing so would clearly be effective for providing the final structure.

In claims 7-8, the applicant requires a specific temperature. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as temperature through routine experimentation in the absence of a showing of criticality.

The limitations of claims 2-6 and 25 have been addressed above.

Response to Arguments

Applicant's arguments with respect to claims 1-8, 25 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1762

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to B. Chen whose telephone number is (571) 272-1417. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bc
12/15/06



BRET CHEN
PRIMARY EXAMINER